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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/232,397	01/15/1999	ALI SALEH	M-7165-US	1881
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33031 7590 07/17/2002

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EXAMINER

NGUYEN, HANH N

ART UNIT

PAPER NUMBER

2662

DATE MAILED: 07/17/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/232,397

Applicant(s)

SALEH ET AL.

Examiner

Hanh Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13,33 and 35 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13,33 and 35 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6, 8-13, 33 and 35 are rejected under 35 USC 103(a) as being unpatentable over **Chaudhuri** (US Pat. No. 6,324,162 B1) in view of **Vaman et al.** (US Pat. No. 6,011,780).

In claims 1, 33 and 35, **Chaudhuri** discloses, in Fig.3, a mesh network 10 comprising nodes 12A ... 12E communicating via optical paths 14₁ ... 14₁₀ (A plurality of nodes coupled by optical links). See col.2, lines 55-60. Node 12E (a First node) initially communicates with node 12D (a second node) via optical paths 14₃, 14₉ and 14₁₀. In case the link path 14₉ fails, node 12E automatically switches traffic via alteration paths 14₈, 14₇ and 14₆, and routes the traffic to node 12D (provisioning a virtual path between a first node and a second node). See col.7, lines 62-65. Finally, node 12E is coupled to node 12D via nodes 12F, 12G, links 14₈, 14₇ and 14₆ (establishing the virtual path by configuring a set of links and intermediate nodes connections between the first node and the second node). See col.7, line 62 to col.8, lines 40. **Chaudhuri** does not disclose discovering a physical path from the first node to the second node by dynamically identifying any intermediary nodes comprising the physical path. **Vaman et al.** discloses a Distributed Self- Healing and Dynamic Reconfiguration (DSDR) algorithm that is

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used in a switch to detect failures of other switches or links to which the switch is connected. Based on the the information received from the failed switch/link, the switch with its DSDR algorithm takes actions such as rerouting traffic via any other intermediate links/nodes to correct any failures that may be detected (Discovering a physical path from the first node to the second node by dynamically identifying intermediate nodes). See col. 9, lines 35-50 & Fig.8. Therefore, it would be obvious to apply the Dynamic Reconfiguration algorithm of **Vaman et al.** into switch network 10 of **Chaudhuri** in order to dynamically establish a physical path interconnecting nodes. The implementation of Dynamic Reconfiguration in a switch network enhances existing switch architectures to provide high service quality in failed links.

In claim 2, **Chaudhuri** discloses, in Fig.3, that when node 12A receives an indication of a failure in link 14₉, node 12A checks for the availability of a restoration channel 18 on link 14₉. In the mean time, node 12D also does the checking for the availability of a restoration channel/link (Testing each node and link). See col.6, lines 35-45.

In claim 3, the limitation of this claim has been addressed in claim 1.

In claim 9, the limitation of this claim has been addressed in claim 1.

In claim 10, the limitation of this claim has been addressed in claim 1.

In claims 11, 12 and 13, **Chaudhuri** discloses, in Fig.2, a restoration path system 20 comprising link database 24, path database 26, restore database 28 to restore alteration paths. The pre-computed path information is pre-stored in end-point nodes to enable the end-point nodes to establish rapid restoration (each node maintains a database which allows the discovering of physical path to proceed more quickly). See Abstract, col.3, lines 48-60. Path database 26 include a record showing paths connecting nodes together wherein each node

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monitors the links to detect a failed link (determining if neighboring nodes have failed). See col.3, lines 50-55 & col.4, lines 5-15.

In claims 4, 6 and 8, **Chaudhuri** discloses, upon receipt at node 12A of an indication of a failure in link 14, from node 12D, node 12A inserts a path alarm indication signal on a still-working segment of the path for receipt at node 12E at which traffic is terminated (terminating virtual path by sending a termination message between nodes; each of links is de-allocated). See col.34-40. Since the network 10 automatically restores alteration paths when a failed path occurs; therefore, primary paths between nodes are de-allocated or terminated simultaneously while the path restoration is being established (intermediate links are substantially de-allocated simultaneously upon reception of a terminated message).

Claims 5 and 7 are rejected under 35 USC 102(e) as being anticipated by **Chaudhuri** (US Pat. No. 6,324,162 B1).

In claims 5 and 7, **Chaudhuri** does not disclose the intermediate links are available for re-use upon de-allocation. It is obvious that once a termination message is sent on the intermediate links connecting end-point nodes to terminate primary path, one or more of the intermediate links are still available to couple end-point nodes. Therefore, it would have been obvious connect the rest of intermediate links between end-point nodes in **Chaudhuri** in order to obtain shortest paths between end-point nodes.

Response to Arguments

Applicant's arguments with respect to claims 1-13, 33 and 35 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues that **Chaudhuri** does not disclose discovering a physical path from the first node to the second node by dynamically identifying any intermediary nodes comprising the physical path.

Vaman et al. discloses a Distributed Self- Healing and Dynamic Reconfiguration (DSDR) algorithm used in a switch to detect failures of other switches or links to which the switch is connected. Based on the the information received from the failed switch/link, the switch with its DSDR algorithm reroutes traffic via any other intermediate links/nodes to correct any failures that may be detected (Discovering a physical path from the first node to the second node by dynamically identifying intermediate nodes). See col. 9, lines 35-50 & Fig.8.

Therefore, it would be obvious to apply the Dynamic Reconfiguration algorithm of **Vaman et al.** into switch network 10 of **Chaudhuri** in order to dynamically establish a physical path interconnecting nodes. The implementation of Dynamic Reconfiguration in a switch network enhances existing switch architectures to provide high service quality in failed links.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Asahi (US Pat. No. 6,222,653) discloses Optical Communication Node and Wavelength Division Multiplexing Optical Transmission Device Having Ring Structure Comprising the Optical Communication Nodes.

Sturgis et al. (US Pat. No. 5,049,871) discloses Loop Communication System.

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Elahmadi et al. (US Pat. No. 6,292,464 B1) discloses Apparatus and Method for Self Routing Control Mechanism for Restoring Fiber Optic Communications Network Connections.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Nguyen whose telephone number is 703 306-5445. The examiner can normally be reached on Monday-Friday 8:30 AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 703 306-4744. The fax phone numbers for the organization where this application or proceeding is assigned are 703 305-3988 for regular communications and 703 308-9051 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-4700.

Fax number : 703 872-9314

Hanh Nguyen



July 12, 2002

KWANG BIN YAO
PRIMARY EXAMINER

